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Test File
This is a test

Hi there

SCORM 2.0: Perspective and Background

This module provides a perspective on the current state of play in relation to learning technology standards in general and in particular for SCORM 1.x which has become a default 'standard' for many learning education and training communities. It was originally written as an introductory section to SCORM 2.0: Learning in the Mainstream.

SCORM 2.0: Perspective and Background

SCORM is often referred to as the ‘de facto’ standard for learning content. There is little question that it has provided immense utility to learning communities globally. It was conceived, however, at a time when the core issues for technology supported learning were very different to the ones that Learning, Education and Training (LET) communities currently face. SCORM and the specifications and standards from which the profile is constituted were developed in response to the need to achieve portability of courses between Learning Management Systems; a ‘mono-dimensional’ separation of packaged content from its delivery. Possibly as a result of this, SCORM implementations have typically resulted in single-user, self-paced online instruction instead of more creative models.

While there is still some value in that objective, the scope of what needs to be achieved and the issues that have become the focus of learning communities in education, government, corporate and defense sectors are now very much broader than purely content aggregation, portability and sequencing. There is evidence that the new requirements for SCORM 2.0 are already being considered with the broader scope in mind (See SCORM 2.0 Home on LETSI and related documents and communities available at that site), so this is just one additional perspective on both the functionality and boundaries that might be considered for SCORM 2.0.

During the period in which SCORM has been available for implementation there have been a number of significant changes in relation to content, infrastructure and the commonly available web-based applications. The sum of these changes would make it nonsensical to redevelop SCORM as it has existed in version 1.x. The emergence of concepts and technologies characterized as “Web 2.0”[footnote] have impacted many of the communication and interaction models on the web. It is now commonplace for LET discussions to focus on the use of Web 2.0 technologies in learning, and this in itself, drives a change in scope from that of SCORM 1.x. In a recent presentation to LearnX 2008 in Melbourne, Professor Nigel Paine proposed five key shifts that would impact learning, education and training. He described them as the shifts from:

While there is definitely hype associated with the term Web 2.0 and debate about the validity given the reliance Web 1.0 technology. Since the beginning of the web it has always been possible for individuals to form communities, share content become individual publishers. Nonetheless, the way Web 2.0 is described by O'Reilly at does provide a basis for understanding the value rather than the hype.

Courses	to	Environments
Delivered Knowledge	to	Shared Knowledge
Control	to	Free Flow
Individuals	to	Communities
Skills [alone]	to	Values and attitudes [as equals to skills]

Slides available here.

These shifts have significant implications for any standard intended to satisfy the needs of LET communities into the future[footnote]. We also need to be quite clear about the role of SCORM in learning (ie what it should enable), and remain clear about those things that should be outside of the scope of SCORM.

A somewhat similar perspective has also been written by Elena Benito Ruiz in her blog E|FL 2.0. While these perspectives represent a substantially different set of needs to those of compliance training and the needs of, for example, military and aerospace sectors, LETSI states that it wants to serve all learning communities. This is a language and 2.0 way of thinking about infrastructure for learning.

We tend to see the requirements of SCORM 2.0 from the perspective of the sector, organization or part of the LET community(ies) to which we belong, and thus, as a group or collection of extended communities, are likely to exhibit differences in what we hold most important. The technical description, or standard, of SCORM 2.0 needs to cross these boundaries of thought and be useful to LET communities in general. When considering the scope and role of SCORM 2.0 we need to be aware of how different the extremes in our spectrum of communities actually are, and do our best to accommodate as much as we are able. For instance, we could juxtapose the regulatory training requirements that span a variety of training communities (eg defense or aerospace) to some of the issues of openness expressed by Martin Weller of the Open University, UK in his blog, "No Good Reason" (view categories such as "openness" or "Open Content"), or on the Open Content blog written by David Wiley who has been an active researcher and writer in the area of instructional design, learning objects and openness in education. It should be noted that this paper has sought to give examples and place some level of emphasis on the needs of LET communities and jurisdictions that have not traditionally participated as actively in SCORM development in the past, even though the ADL has always been interested in such participation. An objective of this paper is to encourage thought and action for those communities whose needs have been less well represented in SCORM 1.x.

Much of the emphasis of SCORM has been at the regulatory and programmatic training end of the spectrum. While there is no shortage of instances where it has been used at various levels of education that begin to move towards the other end of the spectrum, it has been more complex to implement SCORM to support such goals. The education sector is changing as a result of trends in technology and the needs of its stakeholders. As individuals involved in this SCORM redevelopment process it is probably worth spending some time to ensure that we are aware of the full spectrum of need with which we are dealing. Some references that may assist are:

- A publicly accessible excerpt of *Web 2.0: New Tools New Schools* by Gwen Solomon and Lynne Schrum (2007) is available online. It includes the Educational Technology Standards for Teachers, the implications of which are also worthy of consideration.
- Alan Blinder, Professor of Economics at Princeton University in his 2007 contribution to the Forum on the Future of Higher Education titled PREPARING AMERICAS WORKFORCE: Are we Looking in the Rearview Mirror? makes the point that "over the next generation, the kind of education our young people receive may prove to be more important than how much education they receive." (This has also been quoted as "how we educate our children may prove to be more important than how much we educate them" by Friedman in The World is Flat.)

The objective in the perspective provided so far is not to decouple SCORM from its history, but rather, to support the LETSI objective that its work should be consistent with the needs of learning, education and training across all sectors. SCORM could be an important part of meeting those needs through the liberation of content across all manner of boundaries.

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SCORM 2.0: Setting the Boundaries

This module discusses the boundaries that apply to SCORM in terms of its functionality. This module is part of the SCORM 2.0 collection and was originally written as a section of the document titled SCORM 2.0: Learning in the Mainstream.

SCORM 2.0: Setting the Boundaries

At a conceptual level the role of SCORM is to provide:

- a way to aggregate content in a structured manner and make it available to a user in a way that is intended to assist them developing actionable knowledge;
- support for the high-level functionalities[footnote]; and,
  The high-level functionalities are defined in SCORM 2004 3rd Edition Overview Section 1.2.1. They are defined as Accessibility, Adaptability, Affordability, Durability, Interoperability and Reusability and are often referred to as the “ilities”.
- support for rule-based sequencing of content. (LETSI states that this functionality may not be present in the first version of SCORM 2.0.)

It may be argued that support for data exchange with related systems in learning infrastructures should be better supported. This would include support for integration with a range of repositories for competency data, ePortfolios, learner profiles etc. The exchange and useful consumption of what is essentially metadata from these types of repositories is likely to be an important issue for holistic, service-orientated infrastructures. Not all of these data interchange requirements sit entirely within the role of SCORM, however, appropriate support will be critical to success.

Highly regulated views of training are evident in the requirements expressed by defense, aerospace, medical and pharmaceutical industries, food safety, workplace safety and a variety of others. In terms of the diversity of learning, education and training, these requirements may be seen to sit at one end of a spectrum where activities are tightly controlled and highly regulated. The following are a small set of examples of perspectives across these different industry sectors:

a. MedBiquitous requirements for the health sector (see slides);
b. Compliance Training in the Banking Sector (see article); and,
c. an elaboration of training requirements (see example).

By contrast, some parts of the education sector and those involved in the recognition of informal learning are often more interested in more open and less controlled approaches to learning. David Wiley presents an open education view that argues the lack of utility and difficulty in adopting SCORM in [higher education] learning. It is worth considering what this means for the boundaries and role of SCORM.

There is growing emphasis on the possibilities whereby learners establish some type of Personal Learning Environment or “PLE” (eg SocialLearn at the Open University UK). It is possible to actually create various types of mashups that provide a single interface to a PLE, however, this is not within the technical confidence levels of the average user. If PLE’s persist and evolve they are likely to become simpler for the average user to create and more standards driven. There is no apparent reason why SCORM should be ‘the’ standard for such mashups, however, there is likely to be considerable value with higher levels of interoperability, reusability and device-independence of the content available for such mashups.

Given these basic perspectives, SCORM should continue to be concerned with the ‘ilities’, however, within the context of a broader suite of applications that offer functionality designed to support learning rather than just LMSs. It is also important to consider a broader definition of reuse where learning content is liberated from purpose-built LET technologies alone in favour of being mainstreamed within organizations. Rather than being treated as a separate body of content locked away in applications unable to participate in ‘single source publishing’ models the content is liberated for reuse according to need. Within the context of this overall shift, it is probably worth revisiting the ”high-level functionalities” to be supported by SCORM and determine whether adding new content-based functionalities is also appropriate (eg sustainability, scalability, composability, ‘syndicatability’).